

1. An apparatus for use within a DTV Application Software Environment (DASE), comprising:

an output display;

an user input device; and

5 a renderer, coupled to the output display and the user input device, that receives video, audio, and data signals having embedded therein declarative applications, which are accessible by the renderer through declarative Application Program Interfaces (APIs), thereby enabling HTML pages to discover dynamically-linked content and services found within the
10 apparatus and to be displayed on the output display.

2. The apparatus according to claim 1 wherein the APIs enable access to Program System Information Protocol (PSIP) data.

15 3. The apparatus according to claim 1 wherein each API comprises a tag having semantics to enable HTML pages to discover the dynamically-linked content and services.

20 4. The apparatus according to claim 1 wherein the renderer further interprets broadcast information received through the data signals for display on a display device coupled to the output device.

25 5. The apparatus according to claim 2 wherein the tag includes and associated unique identification value to access content.

6. The apparatus according to claim 1 wherein the content can be generated based on user-inputs.

5 7. The apparatus according to claim 1 wherein the renderer searches for a primary content or service defined within the API or a secondary content or service defined within the API should the primary content or service be unavailable.

8. A method of providing access to Program System Information Protocol (PSIP) data stored within at least one XDMML document functioning within a Digital TV Application Software Environment (DASE), comprising:

mapping the at least one XDMML document to a Document Object Model (DOM)
5 structure, the XDMML document having at least one atomic element defined
as a “tag” and the DOM having an atomic element defined as a “node;”
defining a condition within the node;
upon satisfaction of the condition, realizing an action defined by the at least one
tag, which action is found within the PSIP data;
10 otherwise, realizing an action defined by the node.

9. The method according to claim 8 further comprising the step of rendering
the XDMML document based on the realized action.

10. The method according to claim 8 wherein the mapping step comprises
15 identifying all table locations via a master guide table, which further comprises at least one
event information table, at least one event text table having a plurality of events listed
therein, each event defined by a unique event ID, and at least one virtual channel table
having a plurality of virtual channels defined therein, each virtual channel defined by a
20 unique source ID within the virtual channel tables.

11. The method according to claim 10 further comprising the steps of:
defining an object class for each table type identified;
parsing each table;
for each parsed table, constructing an object instance;
5 generating a DOM root document object;
adding each virtual channel as a child of the DOM root document object;
adding each event information table as a child of a virtual channel table based on
source ID;
adding each event text tables as a child of the event information table based on
10 event ID.

12. The method according to claim 8 further comprising the step of rendering
the realized action for display on a display device.

13. The method according to claim 8 further comprising the step of
15 automatically and dynamically updating all referenced actions.

14. A system that receives DASE-compatible broadcast streams containing video, audio, or data components, or any combination thereof, and renders the component(s) in a manner useful to an end user, comprising:

a plurality of smart cards;

a PSIP data base in which service information pertaining to the plurality of smart cards is stored as well as further service information provided by the system independent of the services of the plurality of the smart cards;

means for enabling declarative applications found within the broadcast streams to access the PSIP data base and locate a desired service found therein related either to one of the plurality of smart cards or to the services provided by the system.

15. The system according to claim 14 wherein the declarative applications are in XXML and an XXML Application Program Interface (API) accesses, through the enabling means, the service information of either a smart card or of the system.

16. The system according to claim 14 wherein the declarative applications are in XXML and the system further includes means for mapping XXML declarative applications to a Document Object Mode (DOM), which is used to enable JavaScript access to the PSIP data base.

17. The apparatus according to claim 15 wherein the APIs enable access to Program System Information Protocol (PSIP) data.

18. The apparatus according to claim 15 wherein each API comprises a tag having semantics to enable HTML pages to discover the dynamically-linked content and services.

5 19. The apparatus according to claim 15 wherein the renderer further interprets broadcast information received through the data signals for display on a display device coupled to the output device.

10 20. The apparatus according to claim 18 wherein the tag includes and associated unique identification value to access content.

15 21. The apparatus according to claim 14 wherein the content can be generated based on user-inputs.